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ROCK CREEK BUFFALO REQUEST TO GRAZE BISON ON SCHOOL TRUST LANDS

Environmental Analysis
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CHAPTER I - PURPOSE OF THE PROJECT

PROPOSED ACTION AND OBJECTIVES

Introduction and Description of the Proposed Action

The Montana Department of Natural Resources and Conservation received a request from Ross Adam, Rock Creek Buffalo Inc. in the spring of 2000 to graze buffalo on State grazing leases 4174, 6549, 4161, 4172, 9596, and 4162 (see map - Exhibit A and Table #1). The tracts, which are involved with this analysis, include School Trust land in the following:

Sections 6, 16 Township 8 North, Range 9 West
Sections 10, 12, 22, Township 8 North, Range 10 West
Sections 16, 28, 36, Township 9 North, Range 10 West
Section 32 Township 9 North, Range 9 West

This land is located in close proximity to the communities of DeerLodge, and Garrison Montana. The proposed action would involve grazing approximately 1500 head of buffalo on the leases mentioned above.

Under the lessees proposal, grazing by buffalo would not totally replace cattle grazing on the Trust lands. At least during the foreseeable future, cattle would continue to graze the Trust lands, but at a reduced level. Collectively, the level of grazing by cattle and buffalo on the Trust lands would be at or below the AUM's rated by DNRC for the respective tracts.

The decision to be made by DNRC through process of this review is whether or not buffalo grazing would be authorized on the listed state parcels; and if buffalo grazing is authorized what mitigation measures are appropriate.

It is important to note that the scope of this environmental analysis is exclusive to activities proposed for the above referenced School Trust Lands. Actions or activities of the lessee occurring or planned for implementation on adjoining deeded lands are not under review by DNRC.

Any improvement not specified or proposed at this time and considered in this document would be evaluated by the Department consistent with MEPA requirements when the lessee requests placement approval.

Project Need

The lands involved in this proposed project are held by the State of Montana in trust for the support of specific beneficiary institutions such as public schools, state colleges and universities, and other specific state institutions such as the school for the deaf and blind (Enabling Act of February 22, 1889: 1972 Montana Constitution, Article X, Section 11). The Board of Land Commissioners and the Department of Natural Resources and Conservation are required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for these beneficiary institutions (Section 77-1-202,MCA)

In 1998, following the supreme court decision in Ravalli County Fish & Wildlife Association v Department of State lands, Departmental procedures changed to require environmental analysis when a lessee proposes to change or add a class

of livestock, other than what has been historically grazed on trust lands. This document is being written in compliance with those procedures.

Ross Adam purchased Rock Creek Cattle Co. from the Ward family in 1999. This purchase was made to expand the buffalo operation he currently owns in Grande Prairie, Alberta, Canada. Historically, the Rock Creek Ranch has run sheep and more recently cattle. Mr. Adam currently is reducing the size of his cattle herd while increasing the number of buffalo on the ranch to improve distribution of grazing and make more effective use of the forage. To date the buffalo have been kept in pastures which do not contain any School trust lands, pending the outcome of this environmental document. The action is being proposed in order to allow the ranch to make future plans involving improvement construction (ie. Fencing, & Stock Water tanks etc.), grazing plans, allocation of money and other resources. The Department's obligation is to respond to the lessees request, evaluate and consider potential environmental and socioeconomic effects of authorizing the grazing of buffalo on Trust Lands.

Project Objectives

The grazing lessee has brought this proposal to the Department. Mr. Adams goals are to:

1. Maximize income while being a good steward of the State's land
2. Comply with the policies and guidelines adopted by the Land Board.

The State's objectives are to:

1. Produce the largest measure of reasonable and legitimate return to the trust in the long run.
2. Manage the identified parcels to maintain healthy and biologically diverse ecosystems.
3. To comply with MEPA and all other applicable State law's

DECISIONS TO BE MADE AND PROPOSED SCHEDULE OF ACTIVITIES

The target date for completion of the final version of this environmental documents is November 17th, 2000, when it will be presented to the DNRC Southwest Area Manager (Tony Liane) for his decision on whether alternatives meet project objectives, his selection of an alternative which best meets the project objectives, and a finding on the significance of impacts associated with the selected alternative. After the decision has been made the proponent, Ross Adam (Rock Creek Buffalo), will be notified.

COOPERATING AGENCIES WITH JURISDICTION AND REQUIRED PERMITS

- Montana Livestock Department - Compliance with livestock health regulations(see Exhibit D for bison regulations). check on correct exhibit letter.
- Authorization from the Department of Natural Resources and Conservation to graze buffalo on School Trust Land.

ISSUES AND CONCERNS

The initial stage of any environmental analysis is the public scoping process which is used to inform the public and other interested parties that a State agency has either received a proposal or is proposing an action and wants to gather comments on the possible impacts of the project. The scope of this

document was determined by the professional judgment of resource specialists in DNRC, comments from the public, and other interested parties.

DNRC initiated scoping on a proposal to graze buffalo on all school trust lands leased to Rock Creek Buffalo. Initial scoping was mailed on May 11th, 2000, (see exhibit B). Interested parties were given until June 12th to respond. From the comments and concerns which were received issue statements were developed for analysis.
Through the scoping process, the public, specialists of the DNRC, special interest groups, and other agencies provided comments regarding the project's potential impacts to the environment. These comments were used in developing issues to be analyzed and in the formulation of alternatives to be considered. Issues are grouped and a summary is presented below. They are listed in no particular order, but several issues have discussions, which follow the item. These may not receive further analysis in this document.

Comments were received expressing concerns that:

VEGETATION

- **Grazing of Buffalo may cause deterioration in range health as indicated by grass species composition, particularly in riparian areas.**

  Changing the species of animals grazing state land has the potential to cause direct effects to the utilization of forage both in vegetative species selection, physiological harvest method, and utilization of the vegetative resource on the landscape, thereby causing shifts in vegetative health, and plant species composition.

  School Trust lands are evaluated for carrying capacity once every 5 to 10 years, depending on past history and the presence of weed or grazing problems. These inspections involve an evaluation of riparian areas, which are present along with any improvements. Grazing capacities, which are established during these inspections, represent the maximum amount of forage, which may be removed.

  This issue will receive more analysis in Chapters III and IV.

WILDLIFE

- **Issues generated during scoping generally related to potential conflicts with big game, particularly elk. Specific topics included the following:**

  potential competition during winter
  effects to wildlife movement corridors, including possible fence restrictions and direct displacement of wildlife by bison
  potential displacement of elk to sub-marginal range by bison
  potential disease transmission

Because they are related, these issues will be discussed together.

These issues will receive further discussion in chapters III and IV.

FISHERIES

- **Changing the species of animals grazing state land has the potential to cause negative impacts on the existing trout populations associated with streams on the States ownership**

  Wayne Hadley, Montana Department of Fish Wildlife and Parks, fisheries biologist was contacted for his input on the existing condition and potential problems associated with the action alternative.

  This issue will receive further analysis in chapter's III and IV.

OTHER

- **Changing the species of animals grazing state land has the potential to cause damage to existing fences and allow trespass of stock onto adjacent property.**

  - Adjacent landowners are concerned about the lessee's ability to confine buffalo to deeded or leased land and the liability for any damage, which may be caused if an escape occurs. In addition the common boundary fences between Rock Creek Buffalo and adjacent neighbors may receive increased damage from the buffalo herd resulting in an added financial burden to adjacent owners.

  - **Changing the species of animals grazing state land has the potential to increase soil erosion within the States ownership.**

  Among the 9 tracts there are approximately 13 different soil series (see exhibit C for soils map). None of these soil series are classified by the Natural Resource Conservation Service (NRCS) as highly erosive. The issue of increased soil erosion is not only influenced by soil types , but also by season of use. Soils would be most susceptible to erosion during spring grazing when they are the wettest. While grazing can be successfully accomplished during this period the operator must exert extra caution and monitoring to detect early signs of erosion .

  During much of the winter grazing season the ground would be frozen and less susceptible to an increase in trailing and/or erosion. While there are some deep silty soils in draw bottoms, most of the soils are well drained and deep. Under the action proposal it would not be expected that there would be any negative impacts to soils created by the buffalo grazing. It is anticipated that due to the increased use during the fall/winter, months a reduction in spring/summer grazing should occur. It is expected that there may be an increase in localized soil disturbance i.e. wallows. Pastures would need to be monitored by the lessee and animals moved if the disturbance becomes excessive.

No **further analysis is planned for this issue.**

- **Changing the species of animals grazing state land has the potential to negatively affect the ability of recreational users to access and use school trust lands. What type of public access would be provided for recreational users of the State land involved with this proposed action?**

From the legal standpoint of the State recreational access law, 77-1-801 to 77-1-810, MCA, there would not be any changes in the accessibility of these tracts (other than possible seasonal site specific restrictions - noted below). The diverse habitat and topography of the School Trust lands provide opportunity for an abundance of individual or outfitted recreational activities, to persons who possess State Land Recreational Use Licenses. Recreational pursuits or access involving use of motorized vehicles would be restricted to roads designated and posted open for such use. Most of the State parcels are surrounded by privately owned land, generally Rock Creek Buffalo, and are only accessible if authorization is granted to cross the private land.

The time of year when recreationists use a particular tract may impact the type and amount of use a particular tract may provide. Buffalo generally give birth to their young in May and June. Bison cows are very protective of their young and it is better, from a safety standpoint, to not disturb them during calving (NebFacts, Bison Management and Marketing, Nebraska Cooperative Extension NF98-356, Cooperative Extension, Institute of Agriculture and Natural Resources, University of Nebraska Lincoln, March 1998). While it may be safe to be in the same pasture with calving animals it would not be a good safety practice to be in close proximity. There is one tract, which is accessible by public road, section 22 T8N R11W, and one, which is bisected by a navigable river, section 16 T8N R10W. The remainder are land-locked by private landowners and would require authorization for access. The only changes, which would occur under the action alternative, would involve recreationist avoiding cow bison during calving, May and June.

The boundary fence which is needed to keep bison within the project area has the potential to hinder recreationist's access to two School Trust sections. The regular barb wire fence would not be a hindrance but the high tensile electrified wires could be an impediment. If access problems were to arise this concern would be mitigated by RCB providing access at normally frequented access points and signing them so recreations would be aware of their location.

No further analysis of this issue will occur in chapters III and IV.

CHAPTER II ALTERNATIVES

This chapter is intended to describe the alternatives developed and considered in this environmental analysis. It contains summaries and comparisons of the actions and effects involved with each alternative. The environmental consequences of each alternative are listed here for comparative purposes. More detailed information can be found in Chapters III and IV, which follow.

Initial Stages of Development

The initial proposal from Rock Creek Buffalo Inc. (R.C.B.) involved all of th Trust land which they lease by R.C.B. In August Rose Leach, SWLO Wildlife Biologist, Ross Adam, R.C.B. Owner, Tom Davis, R.C.B. Manager, Tony Liane, SWL Area Manager, and Fred Staedler, Anaconda Unit Manager, met to discuss the progress of the environmental analysis. Mr. Adam inquired whether the environmental analysis could be split into two independent documents and actions. One action would involve analysis of 9 Trust land parcels which are west and south of the Clark Fork River (this environmental assessment) while the second project would involve grazing by buffalo on the remainder of the tracts. The scoping and issue statements, which were already completed, would be used for two separate environmental analyses.

Prior to making the decision about splitting the project into two actions, and analysis, the Division's MEPA specialist, Kathy O'Connor, was consulted for her input. She felt the initial scoping could be used for both analyses provided two criteria were met:

1. Each proposal had to be able to stand on it's own, that is, either one could be approved or denied without impacting the other , either one would be viable by itself.
2. The cumulative effects analysis areas for the two documents should be reasonably exclusive and not overlapping for any of the resources. While this applies to all resources, it is especially important in terms of watersheds. If there is any overlap, it would have to be analyzed twice. If there was overlap we would not be able to say with certainty in the E.A. that the cumulative effects were not significant.

It was decided that both of these criteria were met and that two different analysis could be done. An E.A. covering all land south and west of the Clark Fork River and another document would be analyzed at a future date to cover the remaining tracts. The tracts, which are involved with the E.A., (this document include School Trust land in the following sections:

Sec. 6, 16, Township 8 North, Range 9 West
Sec. 10, 12, 22, Township 8 North, Range 10 West
Sec. 16, 28, 36, Township 8 North, Range 10 West
Sec. 32, Township 9 North, Range 9 West

This land is located in the Deer Lodge, and Garrison, areas (see exhibit A, vicinity map). The proposed action would involve grazing approximately 1500 head of buffalo on the leases mentioned in chapter I.

Development of Alternatives

Upon analysis of existing conditions in the project area by DNRC specialists, project leader, and the Decision Maker, an interdisciplinary team was formed to develop alternatives and address the issues. Public comments were received, grouped into the concerns listed in chapter I and existing condition information was compiled. Using this information a reasonable range of selectable alternatives was developed.

It was believed by the project leader and decision maker that one action and the no action alternative provided a reasonable range given the issue complexity and degree of public interest involved for analysis of the land south and west of the river.

Description of Alternatives

Alternative A No-Action

Alternative A would not authorize the grazing of buffalo on any of the School Trust land. Since the ranch still runs cattle these animals along with horses would be the only classes of livestock allowed to use the State land. The lessee would have to construct approximately 27 miles of barbed wire fence in order to separate the buffalo and cattle. Cattle would be grazed on the Trust land similar to the way they have been historically. The selection of this alternative would not affect the decision for the remainder of the project, those lands which are north and east of the Clark Fork River. The number of AUM's authorized on Trust Lands within the project area would not change, except through routine field evaluations. Implementation of a deferred rotation or any other grazing system would be difficult to implement because of the scattered nature of the grazing and topography.

Alternative B Authorization of Buffalo Grazing

Under this alternative the lessee would be allowed to graze approximately 1500 buffalo in addition to domestic cattle and horses on the Trust Lands in accordance with the AUM's authorized for each tract. The boundary fence around the lessees land and school tracts would be a combination of 4 strand barb wire, which is approximately 40 inches in height, and 2 strands of high tensile electric wire which adds ten inches in height. There is also a high tensile, "hot wire" on the inside of the fence, which discourages the buffalo from leaving the pasture. With the addition of high voltage wires, total fence height is 50 inches. It is not anticipated that additional drift or pasture fencing would be undertaken at this time. The existing pasture arrangement would be used (see exhibit E). Cattle and buffalo would not be grazed on a particular section during the same growing season. For example If cattle grazed a pasture during the spring of one year, buffalo would graze the same pasture during the next growing season. Boundary fence maintenance would be shared between adjacent landowners and Rock Creek Buffalo. Buffalo would be allowed to graze during any season as long as there was no decline in range condition.

TABLE 1
Trust Section, Acreage and Capacity

LEGAL DESCRIPTION				LEASE	GRAZING	LEASED	AUM'S	TRUST	CLASS-IFICATION
Legal	SEC	TWN	RG	#	Ac.	Ac.			
Lots 1-7, inc. SE,SENW,E1/2SE,S1/2 NE	[illegible]	8N	9W	4174	627	627	141	C.S.	Grazing
Pt. Sec. Less21.07ac. for R.R.r/w, &77.8ac. East of river	16	8N	9W	6549	526	41.13	56	C.S.	Grazing
	16	8N	9W	6549	15.13 Ag				
All	10	8N	10W	4161	640	640	114	C.S.	Grazing
All	12	8N	10W	4172	640	640	201	C.S.	Grazing
That portion E. of the Pioneer Rd.	12	8N	10W	9596	143.81	224.81	65	C.S.	Grazing
	12	8N	10W	9596	81 Ag.				
NWNW	32	9N	9W	4172	16	40	5	C.S.	Grazing
	32	9N	9W	4172	24 Ag.				
Pt. Of Sec. Subj to R/W	16	9N	10W	4162	540	639.16	125	C.S.	Grazing
All	18	9N	10W	4161	640	640	157	C.S.	Grazing
All	36	9N	10W	4174	640	640	175	C.S.	Grazing
TOTALS					4532.94	4632.1	1069		

*The difference in totals between grazing acres and leased acres involves land which is not suitable for grazing by livestock for various reasons, ie topography.

The following table provides the proposed grazing season for the next 2 years. Proposed season of use and class of stock are identified for each State section.

TABLE 2

Proposed grazing season and stock class for each State section

Check the legals in this table - they do not match the legals for state land west and south of the interstate. We can probably strike the 2003 reference on the 3rd row as it is not there for all sections.

Legal Description	**Class of Livestock**	**Year**	**Proposed Season of Use**
Section 16 T8N R 9W	None	2001	None
	None	2002	None
Section 32 T9N R9W	Cattle	2001	Summer
	Cattle	2002	Summer
Section 22 T8N R10W	Buffalo	2001	Winter
	Buffalo	2002	Fall/Winter
Section 12 T8N R10W	Buffalo	2001	Winter
	Buffalo	2002	Spring
Section 6 T8N R9W	Buffalo	2001	Winter
	Buffalo	2002	Spring
Section 10 T8N R10W	Buffalo	2001	Winter
	Cattle	2002	Spring
Section 36 T9N R10W	Buffalo	2001	Winter
	Buffalo	2002	Fall/Winter
Section 16 & 28 T9N R10W	Cattle	2001	Spring/Summer
	Cattle	2002	Spring/Summer

Mitigation Measures Proposed under the Action Alternative

1. All leased land would be subject to annual range site evaluations, which would quantify the existing range conditions and would provide data for the determination of long-term trends. The Natural Resource Conservation Service (NRCS) and the Anaconda Unit Manager would conduct evaluations.
2. The lessee would be required to comply with all fencing and open range laws, which pertain to the control of buffalo as, stated in Montana law.
3. Lessee would have to comply with animal related restrictions placed on them by the Montana Department of Livestock. This would especially hold true for those laws, rules and regulations pertaining to diseases and animal transport.
4. If any endangered or threatened species were encountered during project planning or implementation, a DNRC wildlife biologist would be informed immediately. Additional habitat protection measures would be implemented as deemed appropriate by DNRC.
5. If the action alternative causes recreational access difficulties for the public, access points will be designated and signed.

Comparison of Alternatives

Alternative A No Action

This alternative can be used as a baseline for comparing the environmental consequences of the action alternative, because it defers treatment of all sections at this time. Existing conditions would remain primarily the same.

Cattle would continue to concentrate their grazing in draw/stream bottoms with the side hills receiving a disproportionably smaller amount of grazing pressure. Availability of water would be the same problem it has always been. Cattle do not work steep hillsides or area with limited water very well. More fencing, approximately 27 miles would be required in order to keep the buffalo off trust lands.

Alternative B Action

This option would require less fence construction, which would be less of a hindrance to any wildlife passage. It is anticipated that there would be less grazing pressure on the riparian areas and improved utilization of the forage available on hillsides. Table #3 summarizes the environmental effects of both alternatives. A more detailed explanation of environmental consequences can be found in chapter IV.

TABLE 3 ALTERNATIVE COMPARISON TABLE

ISSUES	Alternative A (No Action)	Alternative B (Action)
Riparian Vegetation	Continued high Grazing pressure in the riparian area	Less Grazing pressure in riparian area's
Livestock Distribution	Continued poor grazing distribution with cattle	Improved grazing distribution
Fencing	More fencing required to keep buffalo off Trust Land	Less fencing required then under alt. A, boundary fence would be 50" in height with 3 high tensile electric wires
Trust Income	No change	No change
Elk Migration Ability	More fences to cross	Fewer fences but boundary fences are 50" in height
Disease Transmission to wildlife	Same as current	Bison, cattle and elk are potential carriers of the same diseases
Recreation Access	More fences, approximately 27 miles, installed but less high tensile electric fence on outside perimeter	Less overall fence but more boundary high tensile electric fence. More of a hindrance to recreational access. Designated points of entry to State land to make it easier for recreationists.
Soils	Heavier use in the draw bottoms, more trailing but less concentrated use	Less concentrated use in the draw bottoms, less trailing but more concentrated use on trails, more wallows.
Fisheries	Cattle and horses are grazed at the same amount and duration as has been historically done. Grazing patterns concentrate use in draw bottoms reducing fish habitat	Bison use bottoms less allowing for some improvement in fisheries habitat.

CHAPTER III EXISTING ENVIRONMENT

This chapter identifies and describes those resources, which are affected by the proposed action. It is organized by general resource categories. It does not describe any effects of the alternatives, as these will be covered in Chapter IV. The descriptions of the existing environment found in this chapter can be used as a baseline for comparison in Chapter IV

GENERAL DESCRIPTION OF THE AREA

The Grant Kohrs Ranch National Historical Site and the Clark Fork River bound the area covered by this environmental analysis on the east side. On the south the area is bounded by the Old Stage Road between Deer Lodge and Gold Creek. Along the west side it abuts the Montana State Prison. The north end joins private ranches. It is located between Deer Lodge and Garrison Montana on the west side of the Deer Lodge Valley. All of the sections are dominated by grassland with occasional patches of Douglas fir or Ponderosa Pine occurring on more mesic sites. The topography is gently rolling hills with broad valleys containing intermittent streams. The States ownership within this block of land is approximately 4531.94 (acres of which 369 acres are either current hay field or old hay field). This ground yields 1069 AUM's or approximately .23 AUM's per acre. Most of the grassland is in the 10"-14" precipitation zone and is dominated by native bunch grasses

Cumulative Impacts of Past Activities

Mr. Williams, put Rock Creek Cattle Company together in the 1930. He was a banker in the Deer Lodge Valley who purchased bankrupt ranches and combined them with other land to create a ranch, which mainly grazed sheep. In 1954 the ranch began to change from raising sheep to cattle, which were seen as being more profitable. Prior to the 1930's this property was in the hands of several smaller ranches, which had been grazing sheep, cattle and horses in addition to the wildlife, which occupied the area. There is a history of over 100 years of grazing by different classes of domestic animals on this ground. While there is no quantitative data to show changes over time, it would be safe to assume that there has been some cumulative impacts, which have occurred. There has been some repetitive bank trampling on Willow, Mullan and Rock Creeks the main waterways along with other intermittent streams.

During part of the year, water is diverted from Rock Creek into Mullen spring and Skaggs Cr. drainages. Tame (non-native) plant species have been planted in section 22 and a center pivot irrigation system has been installed in order to produce hay crops. Small patches of State listed noxious weeds have invaded Trust Lands as well as RCB ownership. Grazing by various livestock over the last 100 years has made some modifications to the plant composition. Along waterway's Kentucky Blue Grass has increased along with increaser native grass species over what would be expected under natural conditions. The overall grass management has been quite good especially when the duration of grazing is considered. Approximately 34% of the range sites, on Trust Lands, are in excellent condition, 47% in Good and 19% in fair condition.

AFFECTED RESOURCES

Vegetation

Grazing leases on School Trust land are inspected once every 10 years unless there is a grazing management or weed problem present. If a problem is identified the Department has the option to reduce the lease duration to 5 years.

Native bunchgrasses, adapted to the 10-14" precipitation zone, dominate most of these range sites. Bluebunch Wheat Grass (Agropyron spicatum), Prairie June Grass (Koeleria cristata) and Western Wheat Grass (Agropyron smithii) will dominate healthy range sites. If a site is overgrazed increaser grasses and forbs will take over. The Bluebunch will decrease while Prairie June and Western Wheat Grass increase in percent composition. Where there is more available moisture, 15 - 19" precipitation zones, Rough Fescue, Richardson's Needle Grass and Idaho fescue dominate. Overgrazing would reduce the Rough Fescue, Richardson's Needle Grass and other decreaser grasses allowing increaser's to take over. In general decreaser grasses are larger plants, which provide more forage and are thus more desirable. Where the available moisture exceeds 20" of precipitation the grass lands grade into timber stands of conifers, predominately Douglas fir with some ponderosa pine. Because these stands are on an ecotone between grassland and timbered land they usually combine characteristics of both ecosystem. It is not uncommon to find Rough Fescue, Idaho Fescue and even Bluebunch Wheat Grass plants intermixed in with Douglas fir and Ponderosa pine timber stands.

As previously mentioned the 100+ years of grazing has had some impact on plant community composition, overall most of the range is native and in good to excellent condition. When rangeland is receiving excessive grazing the carrying capacity decreases because of the dominance of increaser plant species. Currently 81 of the range sites are in Good to Excellent condition, and dominated by Bluebunch Wheat Grass.

Cattle and sheep in general are not good at utilizing forage on hillsides. They tend to have very uneven distribution, concentrating their grazing on flat ridge tops where they have easy access and along draw bottoms. Range sites, which have been reduced to fair condition, tend to occur at these sites. In addition to modifying plant communities toward increaser plants, heavy grazing can also increase the amount of Kentucky Bluegrass. This is an introduced species, which does well under heavy grazing. It is rhizomatous and expands its population when grazed heavily.

Of the 3,932 acres of State owned native rangeland contained within the project area, approximately 34 is in excellent condition 47% is in good condition, and 19% is in poor range condition.

Wildlife

Area Definitions
The "project area" refers to the DNRC sections proposed for bison grazing. All are located west of the Clark Fork River, and are intermingled with lands owned by Rock Creek Buffalo Inc.(see table 1 for a list of the tracts involved in this proposal).The total area of DNRC land involved in this proposal is 4532.94 acres. Currently, these sections are leased for grazing by the Rock Creek Buffalo Co. The proposed action is to change the grazing authorization from

west of Garrison during winter. There are no defined big game migration routes through the project or analysis areas.

One elk winter range occurs in the head of Gold Creek, west of the analysis area. Another, larger elk winter range occurs south of the analysis area, on the Montana State Prison Ranch.

A third elk winter range is located east of Interstate-90, and includes Jake, Freezeout, and Spotted Dog Creeks. This area contains the largest number of elk, approximately 750 head. This area also consists of intermingled DNRC and Rock Creek Buffalo Inc. land, although it is not included in this proposal. Elk migration from that area occurs to the east toward the Continental Divide, Telegraph Creek, and Elliston.

FISHERIES

There is very little data on Bull Trout or West Slope Cutthroat presence or genetic status within the project area. The Bull Trout Distribution and Restoration/Conservation Area's map published by the Montana Department of Fish Wildlife and Parks, does not indicate that any of the streams in the project area were ever or are currently Bull Trout fisheries. In conversations with Mr. Hadley he surmised that there is a high probability that Cutthroat have historically used some of these steams. In addition to streams, the Rock Creek ditch, which provides irrigation water for Rock Creek Buffalo, contains fish. This ditch is dried up after irrigation has been completed, late summer/fall. He felt that Spring Gulch might have some trout in it, but had no data to substantiate this.

Cutthroat Trout are spring spawners, laying their eggs during May and June in gravel bottoms. The young hatch out in July. Bull Trout spawn in September and also lay their eggs in stream bottom gravels where they remain until spring when they hatch. Fish eggs are susceptible to damage by a reduction in water quality or degradation in habitat. This could occur by either an increase in stream sedimentation or by mechanically trampling the spawning beds.

Historically grazing of cattle has occurred during spring, summer and fall. It is logical to assume that there have been some past negative impacts on spawning and hatching success due to sedimentation and trampling caused by cattle. This has been exacerbated by the grazing patterns preferred by cattle. Their tendency to congregate in creek bottoms and graze for extended periods of time in one area. Since it is doubtful that there are any Bull Trout in these waterways, (Wayne Hadley, personal communication Oct. 2000), they will not receive further discussion. Cattle grazing and use prior to July when they hatch would have impacted the Cutthroat Trout. Water degradation during any time of the year can negatively affect fish. Use during spawning and hatching would generally have the most negative impact.

FENCING

The lessee has been keeping approximately 1000 head of buffalo within the confines of their private land for the last year. During this time there have not been any escapes. It is not realistic to expect that no escapes will occur over time. When they do happen any damage which results would be covered under State civil law.

81-4-103, MCA, Civil Liability

CHAPTER IV ENVIRONMENTAL EFFECTS

This chapter describes the environmental effects of each alternative on the resources described in Chapter III and contains the scientific and analytic basis for the alternatives comparison summarized in Chapter II. It is organized in the same manner as Chapter III by general resource categories and their associated issues.

AFFECTED RESOURCES

Vegetation

Alternative A - No Action

Grazing patterns would remain the same as they have been since the 1950's when cattle became the dominant class of animals on the ranch. Vegetation in riparian areas and on accessible flat ridges would continue to support a disproportionate share of the grazing. Hillsides would receive light grazing due to the grazing patterns of cattle. With past owners this has led to most range sites being in good to excellent condition.

More fencing would be required in order to keep buffalo from grazing on trust lands. This would include a combination of 30" high boundary fence and standard 40-42" high barbwire fence.

Alternative B - Action

The best way to evaluate impacts which may be occurring to a range site, is by monitoring the shifts in composition of the plant community occupying the site. If the action alternative were to be selected concern related to a possible range deterioration would be addressed by performing annual range evaluations. Range transects would be established in each section. One-hundred foot long transect along with photo points would be established within each section at a representative site. Transects would be evaluated on an annual basis for the first 5 years of the lease to determine range trend. The DNRC unit manager and a representative of the U.S. Department of Agriculture, Natural Resource Conservation Service, Deer Lodge field office would conduct the evaluations. At the end of the 5-year period the need to continue annual evaluations would be assessed. If there appears to be no decline in the range condition, annual evaluations would be discontinued and the tracts put back on the DNRC's regular evaluation schedule. If at anytime during the annual evaluation a decline in range condition is discovered a range management plan would be entered into between the DNRC and the lessee. This Grazing Management Plan would identify specific actions which would be taken to correct the problem. The annual monitoring would continue until the problems were corrected and range condition showed steady improvement.

Grazing, which would be permitted under the action alternative, is expected to have no negative consequential effects on the existing plant communities. Through time some shifts in community composition can and would occur on a localized basis. Some communities would advance toward climax or potential for the site, and others would undergo some digression or divergence. Still other communities would remain relatively unchanged from their present state. Changes or shifts that would occur during the term of the leases are not expected to be notable, provided grazing activities are appropriately controlled.

It is anticipated that the effects of allowing bison to graze the trust lands would be mixed, but mostly positive. The riparian areas on these leases have seen grazing pressure, trampling and compaction from cattle in the past. This has led to some degradation of riparian zones. Because bison tend to utilize uplands and slopes to a greater degree than do cattle, reducing pressures on the riparian zones, opportunities exist for improvement in this area. While bison have a stronger herd instinct than cattle, they also tend to cover more area and are able to, more efficiently utilize difficult terrain (Mousel 1999). It is anticipated that bison use would more evenly distribute grazing pressure and reduce impacts to the riparian areas.

A key to the maintenance and potential improvement of range condition would be annual monitoring of vegetational trends. If range transects indicate a change in vegetative composition, which reduces site condition, then a management plan, would be required to rectify the situation.

Wildlife

Alternative A—No Action

With no action, cattle grazing would continue to occur. Overuse can be expected to continue in riparian bottomlands. There would be continued low level direct, long-term and cumulative negative effects to rangeland resources where overuse occurs. Areas without water would continue to be essentially unused by livestock.

If the Rock Creek Buffalo Co. desires to graze bison on their own land, they would need to build approximately 27 miles of fence to separate their ownership from DNRC land. This would change the complexion of the area from 4 large pastures to an area subdivided with 6 - 640acre fenced enclosures and 3 smaller ones) that would house cattle. These enclosures would be the DNRC lands. This configuration would change the logistics of moving animals from 4 areas to more than 10 areas, depending on current fence locations. In addition, the complicated logistics would likely preclude implementation of grazing management techniques based on terrain and plant physiology-both for the DNRC and RCB. Further, it might concentrate cattle in already overused riparian areas, because the animals would not be able to range as widely as they do now. Increased fence miles also mean more difficulty for local big game travel. The likelihood that individual animals would be injured would increase. Therefore, if 27 miles of fence were built, there would be increased direct, long-term and cumulative negative effects from cattle being limited to isolated riparian areas on DNRC lands. In addition, there would be direct negative effects to individual elk and deer that have difficulty negotiating fences.

Alternative B-Bison Grazing

Two changes would occur to DNRC lands with the addition of bison grazing—1) DNRC lands would experience more widespread grazing use, rather than concentrating use in riparian bottomlands and 2)—grazing would occur during winter. In general, bison tend to use upper elevational ridge tops for grazing during winter (Pam Knowles, Fauna West Consultants), which would distribute their use over a wider area than cattle. A wider distribution of animals means that more plants would be grazed at low levels, rather than a few plants potentially being grazed at high levels. Therefore, the potential for damage to plants is decreased.

Winter grazing by bison would also remove plant biomass during the time that plants are dormant. Thus, there is relatively low potential for damage to plants to occur. If plants were not grazed during the preceding summer by either cattle or bison, then plants would be able to grow uninterrupted and accrue maximum biomass before grazing occurred. In that case there would be low risk of range damage by adding winter grazing by bison. If plants were grazed year-round, then plants would likely undergo damage. Therefore, the DNRC and the lessee would implement a rotation system that rests all DNRC lands at least part of each growing season from both bison and cattle (see Table 2.

No critical big game winter ranges or migration areas occur in the project or analysis areas (Dan Hook, FWP, pers. comm., Oct. 2000). Therefore, there would be little potential for negative effects to wintering big game (for example, winter competition, displacement to sub-marginal ranges, or interruption of migration patterns) caused by bison grazing during winter.

Potential for Disease Transmission

The current Rock Creek Buffalo Co. bison herd was started from animals owned by the landowner in Canada. All were certified disease-free when imported into the United States. Although some elk from the Greater Yellowstone carry *Brucellosis abortus*, there are no reports of wild ungulates infecting domestic cattle under natural conditions (McCorquodale and DiGiacomo 1985). The tendency for pregnant elk to seek seclusion prior to calving likely decreases the potential for transmission. Thus, the potential for the Rock Creek Buffalo Inc. bison herd to be exposed to and subsequently transmit disease would be the same for any cattle herd in the area—extremely unlikely.

In general, bison are subject to many of the same diseases as are cattle. The list of diseases, which can be carried by either, includes Brucellosis (Brucella abortus), and Paratuberculosis (Johne's Disease), among others.

Brucellosis

Brucellosis is an endemic infectious bacterial disease of cattle, bison, elk and various other ruminant animal species. It can also be transferred to other animals and to humans who come in contact with the bacterium. Because it causes pregnant cattle, and bison, to abort their fetus, the disease is economically damaging. The disease is caused by an infection of the bacterium, Brucella abortus. Brucellosis is transmitted from infected animals of one species to another individual of the same or another species generally by means of contaminated fetuses, fetal fluid, or placental membranes. Brucellosis has been eradicated throughout most of the U.S., with only 16 infected herds of domestic cattle and bison being present in the United States today (APHIS). It is also widely known that the bison herds and some segments of the elk herds of the Yellowstone and Grand Teton National Parks area are infected with the disease. It is currently estimated that one to two percent of the animals in the northern elk herd of the greater Yellowstone are infected with Brucellosis (Mousel, 1999).

Johne's Disease

Johne's disease is a common disease of cattle with broad distribution worldwide, though a few countries are free of its effects. The disease is found in all regions of the U.S., where its prevalence is estimated to be in the range of 5 to 20 percent of the total domestic cattle population, as

indicated by testing of slaughtered animals (Johne's Disease, cooperative Extension, Pennsylvania State University, University Park).

Johne's disease has not been widely tested for in cattle herds in Montana. Because of that and because most operations market animals which appear to be in failing health rather than invest in costly testing and treatment programs, the extent of the disease in state cattle herds is unknown at present, though it is believed to be broadly distributed.

Summary

With mitigation in place, there would be low potential for direct, long-term or cumulative negative effects to big game or their habitats from this proposal. Annual rangeland monitoring by the NRCS (Natural Resource and Conservation Service) should detect any potential negative effects to plants and soils. Remedies deemed appropriate by DNRC would be implemented as needed. Deferred-rotation grazing that would not use any single pasture yearlong would ensure that plants could recover from grazing effects

FISHERIES

Alternative A - No Action

Under this alternative historical use by cattle would continue. No changes would occur in terms of season and pattern of use. Cattle distribution would, for the foreseeable future, remain as it has for the last 46 years. Riparian areas would receive a disproportionate amount of use while side hills would be under utilized.

Alternative B - Action

Buffalo tend to move more then cattle do. They will use areas for a shorter duration and use upland area's more efficiently then cattle will. Under this alternative it is reasonable to assume that there would be less grazing pressure on riparian area's and more even distribution of forage utilization through out the pastures. The reduction in riparian area use should translate into improved, range condition, less damage to fisheries habitat and water quality. These improvements would be offset to a minor extent by the stronger herd instinct of buffalo. They tend to stay together as a herd much more then cattle do. When they do graze a riparian area it would be as a herd instead of as individuals. As mentioned above, the duration would be much shorter then for cattle.

FENCING

Alternative A - No Action

Since the lessee desires to graze buffalo on his privately owned land, under this alternative he would have to fence the state land from his deeded ground. This would involve the construction of approximately 27 miles of barb wire fence.

Alternative B - Action

The external boundary of the general project area, including the associated deeded lands is approximately 30.5 miles in length. There are 9 parcels of

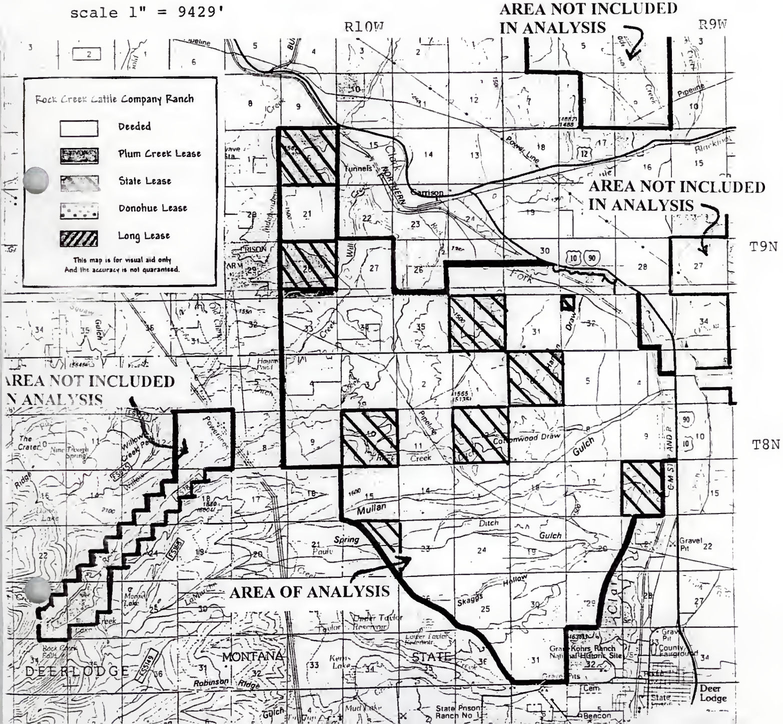
school trust land included in this block. Four of the nine parcels are on the outside of the block and would contain boundary fences between Rock Creek Buffalo and adjacent landowners. Approximately 6.5 miles of external fence on School Trust Land would be required under the action alternative (see exhibit E).

Under the Montana codes 81-4-104, MCA,. Barbed wire fences to be kept in repair..

"The owners of barbed wire fences must keep the same in repair, and any person receiving notice in writing that his barbed wire fence or any part thereof is down or in such condition as to be likely to injure any livestock and fails or refuses to repair such fence is liable to pay damages in an amount equal to the value of any cattle, horses, mules, or other domestic animals which may be injured by coming into contact with the fence".

Where the School Trust land lease borders a county, state or federal highway,(ie Sec. 22 T8N R10W) the grazing lessee would be required to do all of the fence maintenance because the adjacent landowner has no livestock. In Sections where the leased ground adjoins the Clark Fork River, (ie Sec. 16 T8N R9W) the grazing lessee, R.C.B. would again be solely responsible for fence maintenance because the adjacent landowner, State of Montana, does not have any livestock. This narrows the amount of fence where the State lease abuts other landowners with livestock to 4 miles. These fences are located in sections 16 and 28 Township 9 North, Range 10 West. Section 28 is immediately adjacent to the Montana State Prison. The Prison does run cattle on their land. Immediately adjacent to section 16 Township 9 North, Range 10 West, there are two private ranches, Francis Hogan on the North and West side and Marlin Gilman on the East. During the scoping process Mr. Hogan provided input in which he expressed his concerns about buffalo escaping and causing damage to his forage and fencing. It is understood that adjacent landowners and RCB would share equally in maintenance costs of the existing barb wire fence. It would be the responsibility of RCB to install repair and maintain electric wires, to the existing fences.

EXHIBIT A
VICINITY MAP



DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION

EXHIBIT B
Initial Scoping & Mailing List

MARC RACICOT, GOVERNOR

STATE OF MONTANA

Telephone: (406) 542-4200
FAX: (406) 542-4285

SOUTHWESTERN LAND OFFICE
1401 27th Avenue
Missoula, MT 59804

ANACONDA UNIT OFFICE
7916 Highway 1 West
Anaconda, MT 59711
Telephone: (406) 563-6078
FAX: (406) 563-8255
Email: anaunit@in-tch.com

May 11, 2000

The Department of Natural Resources and Conservation has received a request from Rock Creek Buffalo Inc., of Deer Lodge Montana, for authorization to graze Buffalo on their State Land which they lease or license. They are currently allowed to graze cattle and horses. The proposal is to add buffalo to this authorization. Most of the use by buffalo is proposed to occur in the late fall and winter months and would involve approximately 1000 head.

Leases and licenses involved with this proposal are numbers. 3061242, 4161, 4162, 4163, 4164, 4172, 4173, 4174, 4175, 6546, 6547, 6548, 6549, 7457, and 9596. The tracts which are involved include the State's ownership within the following sections:

Sec. 2, 4, 6, 8, 10, 12, 16, 20, Township 8 North, Range 8 West
Sec. 6,16, Township 8 North, Range 9 West
Sec. 10,12, 22, Township 8 North, Range 10 West
Sec. 12, 18, 20, 26, 30, 34, Township 9 North, Range 8 West
Sec. 24, 26, 32, 36, Township 9 North, Range 9 West
Sec. 16, 28, 36, Township 9 North, Range 10 West
Sec. 6, Township 9 North, Range 7 West
Sec.18, Township 10 North, Range 6 West,
Sec. 36, Township 11 North, Range 10 West.

Most of this land is located in the Deer Lodge, Garrison and Avon areas (see attached map). If you have any questions or concerns related to this proposed action please call or send your comments to the following address:

Attn: Fred Staedler Jr.
Montana Department of Natural Resources and Conservation
Anaconda Unit
7916 Highway 1 West
Anaconda Montana 59711

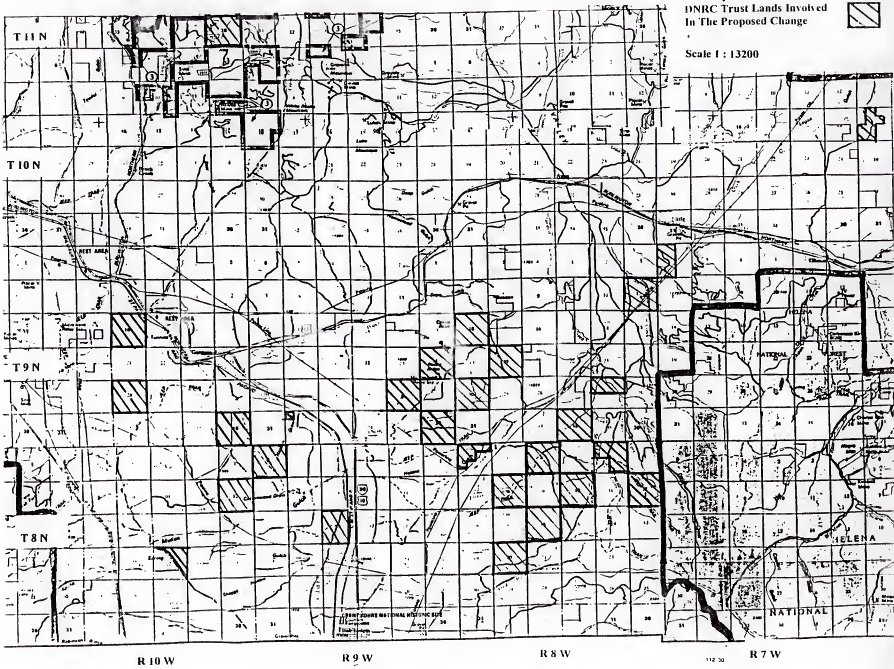
Phone 406-563-6078

We need to receive your input by June 12, 2000. Thank you for your interest in managing School Trust Lands.

"AN EQUAL OPPORTUNITY EMPLOYER"

ROCK CREEK BUFFALO REQUEST FOR GRAZING MODIFICATION LOCATION MAP

May 9, 2,000



DNRC Trust Lands Involved In The Proposed Change ▨

Scale 1 : 13200

ROCK CREEK BUFFALO PROPOSED GRAZING LEASE MODIFICATION SCOPING LIST
5-9-00

1. Scott Howard
600 West St. Mary's Ave.
DeerLodge Mont.
59722

2. Sameer Merchant

21. Joan Best

3. Elvin Perry

4. Rebecca Thomson

5. Donald R. Beck
Garrison
Montana59731

6. U.S. Forest Service
Helena Ranger District
2001 Poplar
Helena Montana
59601

7. U.S. Forest Service
DeerLodge Ranger District
1 Hollenback Road
DeerLodge Montana
59722

8. Louis Smith
261 Emery Road
DeerLodge Mont.
59722

9. John Thompson

10. William Applegate
470 Emery Road
DeerLodge Montana
59722

29. McQueary Ltd Partnership
381 Emery Road
DeerLodge Montana
59722

11. Gravely Simmental Ranch Co.
Avon Montana

12. Plum Creek Timber Co.
140 North Russell
Missoula Montana
59801

13. Cecelia Long

14. John P. Senecal
Avon Montana

15. Virgina Freiburg

16. John Beck
Avon Montana

17. Dan & Don Davis

18. Henry & Francis Kertulla
Avon Montana

19. Elbert Bressie
Spotted Dog Canyon Ranch
Avon Montana

20. Earl Knight
Avon Montana

21. Sixty Six Bovet R. D. Associates

22. William L. & Violet S. Mosier
P. O. Box 41
DeerLodge Montana
59722

23. William Mosier Jr.
371 Freeze Out Lane
Deer Lodge Mont.
59722

24. Treasure State Ranches Inc.
Jim Lane
210 Milwaukee Ave
Deerlodge Mont.
59722

25. Dushan J. Zatecky

26. Shirley Coy

27. Robert Craig

28. Randall Hoppe

29. Montana State Prison
3200 Conley Lake Road
DeerLodge Montana
59722

30. Allen Rome

31. Francis Hogan
DeerLodge Mont. 59722

32. Marlin Gilman
357 Warm Springs Road
Garrison Montana 59731

33. Mason Ranches Inc.
Hall Montana 59837

34. Joseph McGillis
DeerLodge Montana
59722

35. Jim Thomlinson
Jake Creek Road
DeerLodge Mont. 59722

36 Cecelia Long
Helena Montana

37 Deer Park LLC

38. Prickley Pear Sportmens
Helena Montana

39. Skyline Sportsmen
Butte Montana 59701

40. Anaconda Sportmen
% Lorry Thomas
#2 Cherry St.
Anaconda Mt. 59711

41. Stuart Lewin
615 3rd Ave. North
Great Falls, Mt. 59401

42 Tribal Historic
Preservation Office
Con. Salish & Kootenai
Tribes
P.O. Box 278
Pablo, Mt 59855

42. Alliance for the Wild
Rockies
P.O. Box 8731
Missoula, Mt. 59807

43. Clark Fork Pend Oreille
Coalition
P.O. Box 7593
Missoula Mt. 59807

44. Ecology Center
801 Sherwood Suite B
Missoula, Mt. 59802

45. F.H. Stoltze Land and
Lumber Co.
P.O. Box 1990
Columbia Falls, Mt
59912

46. Friends of the Wild
Swan
P.O. Box 5103
Swan Lake, Mt. 59911

47. Bruce Farling, Director
Montana Trout
Unlimited
P.O. Box 7186
Missoula, Mt. 59807

48. Cary Hegreberg
Mont. Wood Pro. Ass.
33 S. Last Chance Gulch
Suite 2B
Helena, Mt. 59601

49. Kevin Chappell
DNRC Ag & Grazing
Mgmt. Bureau
P.O. Box 201601
Helena, Mt. 59620-1601

50. Rose Leach
Wildlife Biologist
SWLO
1401 27th Ave.
Missoula Mont. 59801

51. Patrick Rennie,
Archeologist
DNRC
P.O. Box 201601
Helena, Mt. 59620-1601

EXHIBIT C
Soils Maps & Interpretations

NONTECHNICAL SOILS DESCRIPTION REPORT
soils6

Map Symbol	Soil name and description
25B	STRAW SILTY CLAY LOAM, 0 TO 4 PERCENT SLOPES STRAW SILTY CLAY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-4 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 9.6-11.5; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
36C	VARNEY-CON LOAMS, 4 TO 8 PERCENT SLOPES CON LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 4-8 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 90-105; AVAILABLE WATER CAPACITY IN INCHES: 7.4-10.2; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
36D	VARNEY-CON LOAMS, 8 TO 15 PERCENT SLOPES CON LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 8-15 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 90-105; AVAILABLE WATER CAPACITY IN INCHES: 7.4-10.2; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
41D	PERMA GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES PERMA GRAVELLY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 8-15 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 3.8-4.5; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
41E	PERMA GRAVELLY LOAM, 15 TO 35 PERCENT SLOPES PERMA GRAVELLY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 3.8-4.5; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: RANGELAND.
49B	DANVERS CLAY LOAM, 2 TO 4 PERCENT SLOPES

Map Symbol	Soil name and description
	DANVERS CLAY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 2-4 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 6.3-7.8; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: RANGELAND.
51C	SHAWMUT GRAVELLY LOAM, 4 TO 8 PERCENT SLOPES
	SHAWMUT GRAVELLY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 4-8 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 3.9-4.7; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
51D	SHAWMUT GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES
	SHAWMUT GRAVELLY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 8-15 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 3.9-4.7; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
52B	MARTINSDALE LOAM, 0 TO 4 PERCENT SLOPES
	MARTINSDALE LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-4 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 8.2-10.0; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
52C	MARTINSDALE LOAM, 4 TO 8 PERCENT SLOPES
	MARTINSDALE LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 4-8 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 8.2-10.0; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
52D	MARTINSDALE LOAM, 8 TO 15 PERCENT SLOPES

Map Symbol	Soil name and description
	MARTINSDALE LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 8-15 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 8.2-10.0; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
60B	QUIGLEY LOAM, 2 TO 4 PERCENT SLOPES
	QUIGLEY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 2-4 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 5.9-7.6; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
60C	QUIGLEY LOAM, 4 TO 8 PERCENT SLOPES
	QUIGLEY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 4-8 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 5.9-7.6; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
60D	QUIGLEY LOAM, 8 TO 15 PERCENT SLOPES
	QUIGLEY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 8-15 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 5.9-7.6; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
85E	LOBERG GRAVELLY LOAM, DRY, 15 TO 35 PERCENT SLOPES
	LOBERG GRAVELLY LOAM IS MORE THAN 60 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: HILLS; FROST FREE DAYS: 30-70; AVAILABLE WATER CAPACITY IN INCHES: 4.4-5.1; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: WOODLAND.
95D	YREKA GRAVELLY LOAM, MED PPT, 8 TO 15 PERCENT SLOPES

Map Symbol	Soil name and description
	YREKA GRAVELLY LOAM IS MORE THAN 60 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 8-15 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 4.9-5.7; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, WOODLAND.
95E	YREKA GRAVELLY LOAM, MED PPT, 15 TO 35 PERCENT SLOPES
	YREKA GRAVELLY LOAM IS MORE THAN 60 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: MOUNTAINS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 4.9-5.7; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: WOODLAND.
98F	TRAPPS GRAVELLY LOAM, 35 TO 60 PERCENT SLOPES
	TRAPPS GRAVELLY LOAM IS MORE THAN 60 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 35-60 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 4.6-5.4; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: WOODLAND.
[illegible]	BIGNELL GRAVELLY CLAY LOAM, DRY, 15 TO 35 PERCENT SLOPES
	BIGNELL GRAVELLY CLAY LOAM IS MORE THAN 60 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 4.7-5.9; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: WOODLAND.
[illegible]	VARNEY COBBLY CLAY LOAM, 35 TO 50 PERCENT SLOPES
	VARNEY COBBLY CLAY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 35-50 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS 90-105; AVAILABLE WATER CAPACITY IN INCHES: 6.1-7.0; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: RANGELAND.
[illegible]	VARNEY-CON COMPLEX, 15 TO 35 PERCENT SLOPES

Map Symbol	Soil name and description
	CON LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 90-105; AVAILABLE WATER CAPACITY IN INCHES: 7.4-10.3; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: RANGELAND.
151D	SHAWMUT COBBLY LOAM, 8 TO 15 PERCENT SLOPES
	SHAWMUT COBBLY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 8-15 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 3.9-4.7; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
151E	SHAWMUT COBBLY LOAM, 15 TO 35 PERCENT SLOPES
	SHAWMUT COBBLY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 3.9-4.7; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: RANGELAND.
151F	SHAWMUT COBBLY LOAM, 35 TO 60 PERCENT SLOPES
	SHAWMUT COBBLY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 35-60 PERCENT. LANDFORM: MOUNTAINS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 3.9-4.7; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: RANGELAND.
195E	YREKA GRAVELLY LOAM, COOL, 15 TO 35 PERCENT SLOPES
	YREKA GRAVELLY LOAM IS MORE THAN 60 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: MOUNTAINS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 4.9-5.7; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: WOODLAND.
200F	BRAZIEL-TOLBERT-ROCK OUTCROP COMPLEX, 35 TO 60 PERCENT SLOPES
	ROCK OUTCROP (NO DATA)
242E	BRAZIEL GRAVELLY LOAM, 15 TO 35 PERCENT SLOPES

NONTECHNICAL SOILS DESCRIPTION REPORT
soils6

Map Symbol	Soil name and description
	BRAZIEL GRAVELLY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 4.1-6.3; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: RANGELAND.
251E	SHAWMUT STONY LOAM, 15 TO 35 PERCENT SLOPES
	SHAWMUT STONY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 4.1-4.8; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: RANGELAND.
[illegible]	PERMA COBBLY LOAM, 35 TO 60 PERCENT SLOPES
	PERMA COBBLY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 35-60 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 4.1-4.8; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: RANGELAND.
351F	ROY-SHAWMUT-DANVERS COMPLEX, 35 TO 60 PERCENT SLOPES
	DANVERS COBBLY CLAY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 35-60 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 5.8-6.8; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: RANGELAND.
[illegible]	MARTINSDALE COBBLY LOAM, 0 TO 4 PERCENT SLOPES
	MARTINSDALE COBBLY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-4 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 7.9-9.8; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
	MARTINSDALE COBBLY LOAM. 15 TO 35 PERCENT SLOPES

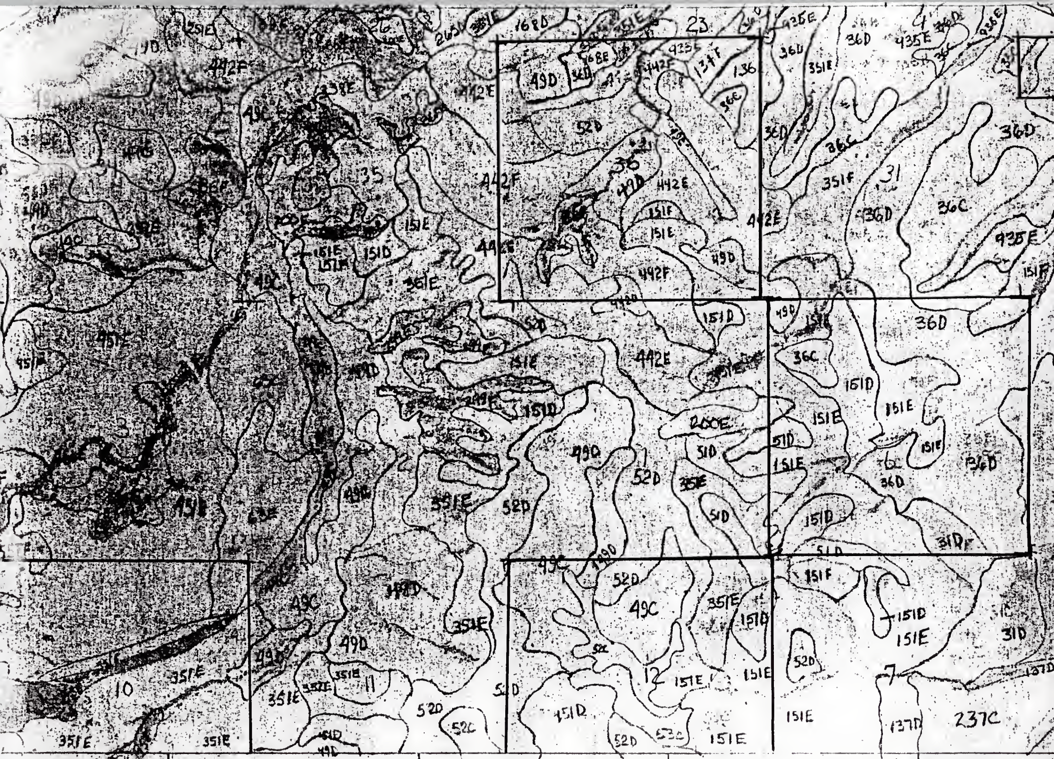
Map Symbol	Soil name and description
	MARTINSDALE COBBLY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 7.9-9.8; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: RANGELAND.
442E	BRAZIEL-TOLBERT COMPLEX, 15 TO 35 PERCENT SLOPES TOLBERT VERY STONY LOAM IS 10-20 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 1.1-1.6; MAJOR CONSIDERATIONS: SLOPE, DEPTH TO HARD ROCK; LANDUSE MAY INCLUDE: RANGELAND.
442F	BRAZIEL-TOLBERT COMPLEX, 35 TO 60 PERCENT SLOPES TOLBERT VERY STONY LOAM IS 10-20 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 35-60 PERCENT. LANDFORM: MOUNTAINS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 1.1-1.6; MAJOR CONSIDERATIONS: SLOPE, DEPTH TO HARD ROCK; LANDUSE MAY INCLUDE: RANGELAND.
549B	MARCOTT SILTY CLAY LOAM, 0 TO 4 PERCENT SLOPES MARCOTT SILTY CLAY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-3 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 8.0-9.8; MAJOR CONSIDERATIONS: WATER TABLE. SALINITY, SODICITY; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
649B	TURRAH SILTY CLAY LOAM, 0 TO 4 PERCENT SLOPES TURRAH SILTY CLAY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-4 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 7.1-8.6; MAJOR CONSIDERATIONS: WATER TABLE; LANDUSE MAY INCLUDE: RANGELAND.
735B	TETONVIEW-BLOSSBERG LOAMS, WET, 0 TO 4 PERCENT SLOPES, RARELY FLOODED

Map Symbol	Soil name and description
	BLOSSBERG LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-4 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 4.4-5.7; MAJOR CONSIDERATIONS: FLOODING, WATER TABLE; LANDUSE MAY INCLUDE: NONE LISTED.
846E	ROY-TOLBERT COMPLEX, 15 TO 35 PERCENT SLOPES TOLBERT STONY LOAM IS 10-20 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: MOUNTAINS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 1.1-1.6; MAJOR CONSIDERATIONS: SLOPE, DEPTH TO HARD ROCK; LANDUSE MAY INCLUDE: RANGELAND.
935E	ANACONDA LOAM, 15 TO 35 PERCENT SLOPES, MODERATELY IMPACTED ANACONDA LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: NO DATA; FROST FREE DAYS: NO DATA; AVAILABLE WATER CAPACITY IN INCHES: 6.6-8.4; MAJOR CONSIDERATIONS: SLOPE; LANDUSE MAY INCLUDE: RANGELAND.

Map Symbol	Soil name and description
53C	SHAWMUT-MARTINSDALE COMPLEX, 4 TO 8 PERCENT SLOPES MARTINSDALE LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 4-8 PERCENT. LANDFORM: ALLUVIAL FANS; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 8.2-10.0; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
149D	DANVERS COBBLY CLAY LOAM, 8 TO 15 PERCENT SLOPES DANVERS COBBLY CLAY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 8-15 PERCENT. LANDFORM: ALLUVIAL FANS AND STREAM TERRACES; FROST FREE DAYS: 70-90; AVAILABLE WATER CAPACITY IN INCHES: 8.2-10.0; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND.
168E	DOLUS-BOXWELL COMPLEX, 15 TO 35 PERCENT SLOPES BOXWELL LOAM IS 20-40 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 15-35 PERCENT. LANDFORM: HILLS; FROST FREE DAYS: 90-105; AVAILABLE WATER CAPACITY IN INCHES: 5.8-6.5; MAJOR CONSIDERATIONS: SLOPE, DEPTH TO SOFT ROCK; LANDUSE MAY INCLUDE: RANGELAND.
169F	DONEY-DOLUS CHANNERY LOAMS, 15 TO 45 PERCENT SLOPES DOLUS CHANNERY LOAM IS 20-40 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 15-45 PERCENT. LANDFORM: HILLS; FROST FREE DAYS: 90-105; AVAILABLE WATER CAPACITY IN INCHES: 2.7-3.4; MAJOR CONSIDERATIONS: SLOPE, DEPTH TO SOFT ROCK; LANDUSE MAY INCLUDE: RANGELAND.
886E	WINKLER, DRY-RUBBLE LAND-ROCK OUTCROP COMPLEX, 15 TO 35 PERCENT SLOPES ROCK OUTCROP (NO DATA)
995E	YREKA, MED PPT-ROCK OUTCROP COMPLEX, 15 TO 35 PERCENT SLOPES

NONTECHNICAL SOILS DESCRIPTION REPORT
soils10

Map Symbol	Soil name and description
	ROCK OUTCROP (NO DATA)
995F	YREKA, MED PPT-ROCK OUTCROP COMPLEX, 35 TO 60 PERCENT SLOPES
	ROCK OUTCROP (NO DATA)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36
31
10
11
12
7
442F
442E
49C
49D
52D
151E
151D
151F
351E
351F
36D
36C
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49D
490E
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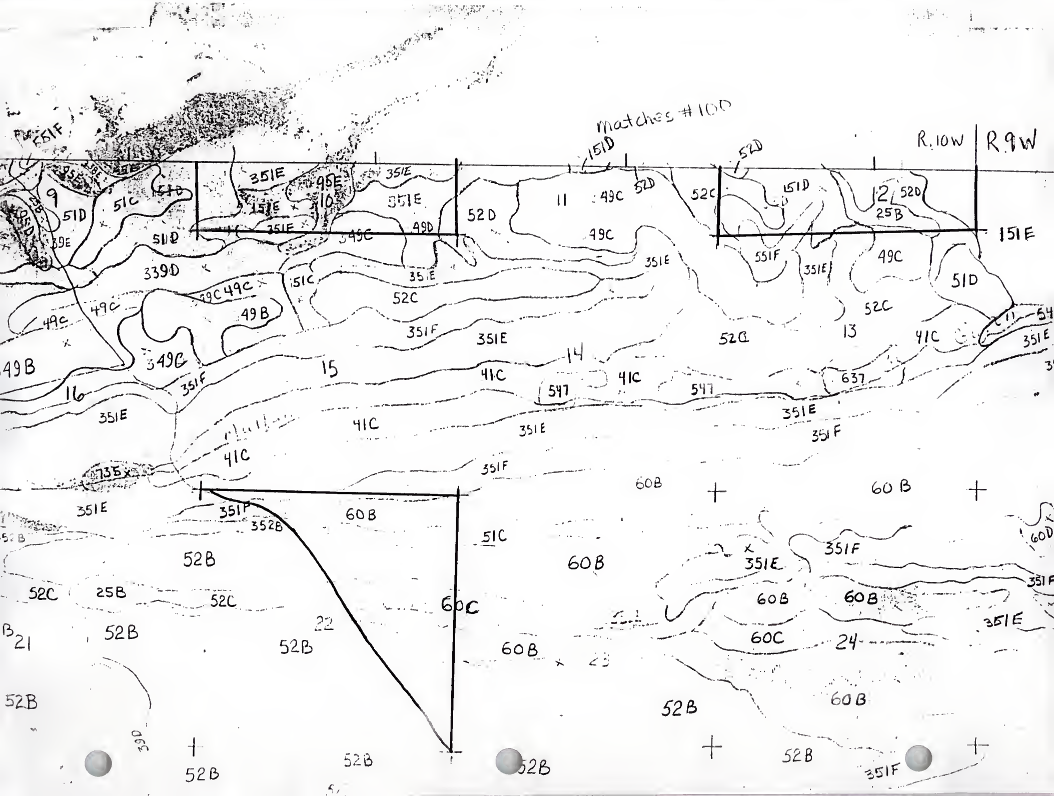
51D
152
31D
237C
137D
520
52C
451F

MATCHES # 105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R9W
551F
95E
39E
9
25B
51D
51C
151D
39E
51D
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95E
151E
10
351E
351E
41C
49C
49D
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60C
24
52B
52B
60B
390
52B
52B
52B
52B
351F

EXHIBIT D
Bison Health Requirement

* * *

CVI & PERMIT

BISON

TB: All ages and sexes must have negative TB (Caudal Fold) test not more than 60 days prior to entry **OR** Originate from an accredited TB free herd **OR** be consigned directly to an official slaughtering establishment

BRUCELLOSIS: 12 months & over – All sexes, negative 30 day Brucellosis test – even class free states, retest cows and bulls From **Class A States** which were tested for entry **OR** be from a Certified Free herd **OR** go directly to an official Slaughtering establishment.
EXCEPTION: No test on neutered bison

NO RETEST ON **SOUTH DAKOTA** BISON EXCEPT **TRIPLE U HERD – (Triple U Herd must be approved by State Veterinarian)**

VACCINATED COWS TEST ELIGIBILITY. IF FIRST PAIR OF PERMANENT INCISOR TEETH HAVE ERUPTED OR THEY ARE IN LAST TRIMESTER OF PREGNANCY. (This usually occurs around 21 months of age)

4 - 12 months. - no Brucellosis test, if vaccinated - follow cattle requirements for Brucellosis.

MICHIGAN – TB (SEE OFFICIAL ORDER NO. 00-01-I)

* * *

CVI & PERMIT

CAMELIDS - [LLAMAS, ALPACAS, CAMELS] & YAKS

TB: Test all ages and sexes not more than 60 days prior to entry.
(Camelids - Axillary TB Test) (All others - Caudal Fold TB Test)

BRUCELLOSIS: Test all ages and sexes within 30 days prior to entry

EXCEPTION: No test on neutered males or females

NO TESTS REQUIRED ON NURSING YOUNG WITH MOTHERS -

MICHIGAN – TB (SEE OFFICIAL ORDER NO. 00-01-I)

* * *

APPENDIX F

CHECKLIST FOR ENDANGERED, THREATENED AND SENSITIVE SPEICES
SOUTHWESTERN LAND OFFICE

Threatened and Endangered Species	[Y/N] Potential Impacts and Mitigation Measures N = Not Present or No Impact is Likely to Occur Y = Impacts May Occur (Explain Below)
Bald Eagle (*Haliaeetus leucocephalus*) Federally-threatened, proposed for de-listing Habitat: late-success ional forest <1 mile from open water	[Low potential for negative effects] Wintering bald eagles occur in the vicinity, associated with the Clark Fork River. Breeding bald eagles occur in Latilong [illegible], which includes the project and analysis areas. Eagle roosting or nesting would be associated with large-sized trees near the river, which is outside of the analysis area fences. Bald eagles would likely feed upon winterkilled livestock and big game in the project and analysis areas. However, the proposed addition of grazing bison would likely not affect bald eagles.
Lynx (*Felis lynx*) Habitat: mosaics--dense sapling and old forest >5,000 ft. elev.	[N] Habitat in the project and analysis areas has low suitability for lynx.
Gray Wolf (*Canis lupus*) Habitat: ample big game pops., security from human activity	[Low potential for negative effects] Gray wolves do occur in the vicinity (Boulder pack) and would likely feed on winter-killed animals in the project and analysis areas. Bison may be more able to defend themselves and their calves (than domestic cattle are), from wolf depredation (Ed Bangs, USFWS pers. comm.). In that regard, having more bison than cattle grazing may decrease the risk to wolves from conflicts with raising livestock. Therefore, adding bison and decreasing cattle would likely have no direct, long-term or cumulative negative effects to wolves.
Grizzly Bear (*Ursus arctos*) Habitat: recovery areas, security from human activity	[N] Grizzly bears could use either the project or analysis areas, but the incidence of occurrence would likely be low. The change to adding bison and decreasing cattle grazing would likely have no direct, long-term or cumulative negative effects on grizzly bears

DNRC Sensitive Species	[Y/N] Potential Impacts and Mitigation Measures N = Not Present or No Impact is Likely to Occur Y = Impacts May Occur (Explain Below)
Peregrine Falcon (*Falco peregrinus*) Formerly federally-threatened, recently de-listed Habitat: cliff features near open foraging areas or wetlands	[N] Peregrines may migrate through the project or analysis areas. They are listed as migrants for Latilong 27C, adjacent to the analysis area. However, no preferred habitats (cliff faces at least 50 m tall in proximity to abundant prey production areas) occur in the project or analysis areas. Therefore, no negative direct, long-term or cumulative effects are expected to occur.
Coeur d' Alene Salamander (*Plethodon idahoensis*) Habitat: waterfall spray zones, talus near cascading streams	[N] No preferred habitat occurs in the project or analysis areas.
Flammulated Owl (*Otus flammeolus*) Habitat: late-successional ponderosa pine and Douglas-fir forest	[N] No preferred habitat occurs in the project or analysis areas.
Boreal Owl (*Aegolius funereus*) Habitat: mature to late-successional forest >5,200 ft. elev.	[N] No preferred habitat occurs in the project or analysis areas.
Black-backed Woodpecker (*Picoides arcticus*) Habitat: stand replacement burned forests or mature to old forest that is beetle-infested.	[N] No preferred habitat occurs in the project or analysis areas.
Pileated Woodpecker (*Dryocopus pileatus*) Habitat: late-successional ponderosa pine and larch-fir forest	[N] No preferred habitat occurs in the project or analysis areas.
Northern Bog Lemming (*Synaptomys borealis*) Habitat: spagnum meadows, bogs or fens with thick moss mats	[N] No preferred habitat occurs in the project or analysis areas.
Fisher (*Martes pennanti*) Habitat: dense mature to old forest <6,000 ft. elev. and riparian	[N] No preferred habitat occurs in the project or analysis areas.
Common Loon (*Gavia immer*) Habitat: cold mountain lakes, nest in emergent vegetation	[N] No preferred habitat occurs in the project or analysis areas.
Harlequin Duck (*Histrionicus histrionicus*) Habitat: white-water streams, boulder and cobble substrates	[N] No preferred habitat occurs in the project or analysis areas.

Ferruginous Hawk (*Buteo regalis*) Habitat: prairies and badlands	[Low potential for negative effects] The raptor occurs in grassland habitat such in the project and analysis areas. However there are no records for it in Latilong or 27C. Nesting would begin during late-winter-early spring. Overgrazing by cattle and conversion to agriculture are factors thought to have led to this bird's decline (Dobkin 1992). If range conditions remain good with bison/cattle use (vs cattle then there would be no long-term or cumulative negative effects with the to bison. There would be potential an negative effects if trampling disturb (which may occur on the ground). However the risk may be similar with bison or cattle. If ferruginous hawks are seen during late winter or spring, the DNP biologist would be notified and nest protection measures would be implemented appropriate.
Columbian Sharp-Tailed Grouse (*Tympanuchus phasianellus columbianus*) Habitat: grassland, shrubland, riparian, agriculture	[N] This species is only confirmed breeding in extreme northwestern Montana near Eureka. Therefore no negative eff would be able to occur.
Mountain Plover (*Charadrius montanus*) Habitat: short-grass prairie, especially associated with prairie dog towns	[N] No short-grass prairie with prairie dog towns occurs in the project or analysis areas.
Townsend's Big-Eared Bat (*Corynorhinus townsendii*) Habitat: caves, caverns, old mines, large-hollow snags in CA)	[N] No caves, mines, lava tubes, or abandoned buildings occur in the area. Therefore, no suitable roosting habitat occurs. Thus, the occurrence of this species is unlikely.

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CONSERVATION PLAN MAP

CONSERVATION PLAN MAP